Office Hours:
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CMC Econ 197s

Behavioral Finance, Financial Crises, and Risk Management

Until the outbreak of the financial crisis that began in the US subprime mortgage market and spread across the globe, the last several decades had been widely viewed as a global era of finance. The combination of financial liberalization and developments in financial theory and information processing technology led to the broadening of financial markets, the creation of many new financial products and great increases in the sophistication of risk management. In many countries, including the United States, the financial services industry grew rapidly as a share of GDP and attracted a growing number of graduates from top colleges and universities.

At the same time, however, the number of largely unanticipated currency and financial crises also grew rapidly. Before the global crisis of 2007 we had the stock market bust of 1987, the crisis in the European monetary system in the early 1990s, the Mexican crisis in 1994, the Asian crisis in 1997, the Russian crisis and the failure of Long Term Capital Management in 1998, and the bursting of the dot com bubble at the beginning of the 21st century, to name just some of the most prominent.

This disconnect is the major focus of this course. Its major theme is that much of the disconnect can be explained by the widespread adoption of deficient mental models or theoretical perspectives which led to overconfidence that financial risk had been largely conquered through the development of new financial instruments to hedge risk and new techniques of risk management. These developments did provide many benefits, but they also led to too narrowly focused analysis that resulted in important blind spots. This resulted in the buildup of unnoticed risks that were not the focus of particular risk management techniques being used.

While often quite sophisticated mathematically, most of the new techniques in financial theory and risk management relied heavily on assumptions of efficient, normally distributed markets, with ample liquidity and continuous trading. While highly relevant much, if not most of the time, these assumptions often fail during periods of stress – which it can be argued is when they are most needed.

A major problem with these risk management techniques was excessive reliance on simple extrapolation of market behavior and correlations from the recent past into the future and insufficient focus on political and economic analysis to identify emerging vulnerabilities.

Many of reasons why financial markets may not always behave efficiently and why decision makers frequently failed to learn the lessons from earlier crisis can be at least partially explained by contributions from the relatively new fields of research in behavioral and neuro economics and finance which focus on limitations of human cognitive abilities and the existence of biases that often occur in decision making. Combined with issues of limited and costly information, principal-agent problems, and the excessive reliance on popular, but at least partially defective, mental models, we find that there is sometimes insufficient stabilizing speculation or risk arbitrage to offset these imperfections and that as a result, aggregate market behavior will sometimes go astray.

These deviations can have important implications both for public policy and for risk management practices in the private sector.

To deal with such issues the course will bring together several different sets of literature:

- Standard efficient markets financial theory and risk management
- Statistical studies on the behavior of financial markets
- Behavioral and neuro finance
- Currency and financial crisis theory and contagion analysis
- Studies of major current currency and financial crises
- The development of early warning systems for currency and financial crises
- Literature on financial regulation and supervision
- The role of exchange rate regimes, capital controls, financial integration, and monetary and fiscal policies in increasing or reducing the likelihood of crises

After an overview of a number of recent crises and the controversies about their causes, we will begin with a review of basic efficient markets finance theory and popular risk management techniques. The focus will be on the key concepts rather than technical details of the approaches, so strong backgrounds in finance and mathematics are not required.

We will then turn to the limitations of these approaches from the perspectives noted above. Our argument is not that these approaches are completely flawed and should be totally abandoned, but that their limitations need to be kept in mind and they need to be supplemented by other types of analysis.

We will then focus in considerable detail on the origins and spread of the current global crisis, policy responses, and the proposals for financial reforms being debated in national forums and internationally in the meetings of the G-20.

The main books for the course are *The Essentials of Risk Management* by Michael Crouhy, Dan Galai, and Robert Mack (2005) McGraw-Hill (CGM), *The Myth of the Rational Market: A History of Risk, Reward, and Delusion on Wall Street* by Justin Fox, Harper Business, 2009, and *Financial Shock* by Mark Zandi FT Press, revised paperback edition. This will be supplemented by numerous readings from other books, articles, and research reports and policy analysis from organizations such as Bank for International Settlements, Federal Reserve, Financial Stability Board, the International Monetary Fund, and the Shadow Regulatory Committees. Graded work for the course will consist of a midterm and final, and several short written reports and oral presentations.

Prerequisites: Econ 101 and Econ 102

Preliminary Reading List

(R) Refers to recommended or for reference and unmarked are required. These have been marked for Parts I and II. Additional references and required readings for the later parts will be added as the course progresses.

Part I. Overview

A. The Intersection of Risk Management, Behavioral Finance, and Financial Crises

"Briefing: The State of Economics" The Economist, July 18, 2009, pp. 65-69.

"Lessons and Limits of Behavioral Finance Unpicked." Financial Times (FTfm), September 14, 2009.

"Risk Management Rises on Agenda." Financial Times (FTfm), September 14, 2009.

T.D. Willett "The Role of Defective Mental Models in Generating the Global Financial Crisis" presented at the Cornell University Workshop on the Global Financial Crisis

CGM Ch. 1

Fox, Introduction and Epilogue

Zandi, Introduction and Ch. 1

(R) Krugman, P. (2009) "How Did Economists Get It So Wrong?" New York Times, September 2.

(R) Cochrane, J. "How did Paul Krugman Get It So Wrong?" (For copies of this, google John H. Cochrane.)

B. An Introduction to Behavioral Finance

Bernstein, P.L. (2007) *Capital Ideas Evolving,* John Wiley. Part 1 – "The Behavioral Attack" pp. 3-33.

Malkiel, B. G. (2007). *A Random Walk Down Wall Street: The Time-Tested Strategy for Successful Investing.* W.W. Norton & Company, Inc., New York. Chapter 10 "Behavioral Finance."

C. Introduction to Theories of Currency Crises, Stock Market Bubbles, and Crashes and Banking Crises

Carmen Reinhart and Kenneth S. Rogoff (2009), *This Time is Different: Eight Centuries of Financial Folly,* Princeton University Press. Preface, Preamble, and Ch. 1.

Charles P. Kindelberger and Robert Aliber (2005), *Manias, Panics, and Crashes: A History of Financial Crises,* 5th Edition, John Wiley. Ch. 1-3.

Barry Eichengreen (1999) *Toward a New International Financial Architecture*, Institute of International Economics. Appendix B.

T. Willett, et al (2009). "Currency Crisis" in *The Princeton Encyclopedia of the World Economy,* Princeton University Press.

Part II. Efficient Markets, Modern Finance Theory, and Risk Management

Oxelheim, L. and C. Wihlborg (2008) *Corporate Decision-Making with Macroeconomic Uncertainty: Performance and Risk Management*. Oxford University Press.
Ch.1 – "Macroeconomic Uncertainty in a Corporate Perspective"
Ch. 2 "Concepts of Macroeconomic Risk Management"

CGM Ch. 2-5, 7, 14, and Epilogue

Fox, Ch. 1-2 skim, Ch. 3-9 and 16 read carefully

(R) Das, S. (2006). *Traders, Guns & Money: Knowns and Unknowns in the Dazzling World of Derivatives.* FT - Prentice Hall.

(R) Douglas W. Hubbard (2009) *The Failure of Risk Management.* John Wiley Publishing.

(R) Pablo Triana (2009) *Lecturing Birds on Flying: Can Mathematical Theories Destroy Financial Markets?* John Wiley Publishing.

(R) Lindsey, R. R. and B. Schachter (2009). *How I Became a Quant: Insights from 25 of Wall Street's Elite.* Hoboken, NJ: John Wiley Publishing.

Part III. More on Alternative Views of Financial Market Behavior: Behavioral and Neuro Finance Chaos and Complexity Theory, Soros' Reflexivity, Costly Information, Uncertainty, Mental Models, Principal-Agent Problems, Perverse Incentives

A. Bubbles, Crashes, and the Non-Normal Behavior of Financial Markets

Mandelbrot, Benoit and Richard Hudson *The (Mis)Behavior of Markets: A Fractal View of Financial Turbulence.* Basic Books. Chapters I and XII.

Malkiel, Chapters 2 - 4.

Bookstaber, R. (2007). *A Demon of Our Own Design: Markets, Hedge Funds, and the Perils of Financial Innovation.* John Wiley and Sons, Inc. Publishing. Chapters 2 and 6.

(R) Taleb, N. N. (2007). *The Black Swan: The Impact of the Highly Improbable.* New York, NY: Random House Publishing.

(R) Smithers, A. (2009). *Wall Street Revalued: Imperfect Markets and Inept Central Bankers.* John Wiley & Sons, Inc., United Kingdom.

B. The Complexity Approach to Financial Markets

Beinhocker, E. (2007). *The Origin of Wealth: Evolution, Complexity, and the Radical Remaking of Economics.* Harvard Business School of Press.

Bookstaber, Chapters 1, 8, and conclusion.

(R) Sornette, D. (2003). *Why Stock Markets Crash: Critical Events in Complex Financial Systems.* Princeton University Press, Princeton, NJ.

C. Rational Market Imperfections

Frydman, R. and M. Goldberg (2007) *Imperfect Knowledge Economics*. Princeton University Press.

Shleifer, A. (2001). *Inefficient Markets: An Introduction to Behavioral Finance*. Oxford University Press.

D. Soros' Reflexivity

T. Willett (2009). Review Essay "George Soros' Reflexivity and The Global Financial Crisis."

Soros, G. (2008). *The New Paradigm for Financial Markets: The Credit Crisis of 2008 and What It Means.* Public Affairs.

E. More on Behavioral and Neuro Finance

Fox, Chapters 10, 11, 14, and 16.

Akerlof, G. A. and R. J. Shiller (2009). *Animal Spirits: How Human Psychology Drives the Economy, and Why It Matters for Global Capitalism.* Princeton University Press.

Barberis, N. and R. Thaler (2002). "A Survey of Behavioral Finance," National Bureau of Economics Review Working Paper No. 9222. Cambridge, MA.

Burnham, T. (2008). *Mean Markets and Lizard Brains: How to Profit from the New Science of Irrationality*. John Wiley & Sons, Inc., New York.

Klontz, B. and T. Klontz (2009). *Mind Over Money: Overcoming the Monetary Disorder that Threatens our Financial Health.* Broadway Books (Random House).

Mangot, M. (2009). *50 Psychological Experiments for Investors*. John Wiley (Asia).

Montier, J. (2002). *Behavioral Finance: Insights into Irrational Minds and Markets.*

Peterson, R. L. (2007). *Inside the Investor's Brain: The Power of Mind Over Money.* John Wiley and Sons, Inc Hoboken, NJ.

Shefrin, H. (2000). *Beyond Greed and Fear: Understanding Behavioral Finance and the Psychology of Investing*. Boston, MA: Harvard Business School Press.

Shleifer, A. (2001). *Inefficient Markets: An Introduction to Behavioral Finance.* Oxford University Press.

Zweig, J. (2007). *Your Money and Your Brain: How the New Science of Neuroeconomics Can Help Make You Rich.* Simon and Schuster.

F. The Limits of Market Discipline

Willett, T. (2000) "International Financial Markets as Sources of Crisis or Discipline." *Princeton Essays in International Finance*.

TBA

Part IV. Analysis of Some Previous Crises

T. Willett et al (2005) "The Asian Crisis Re-examined." Asian Economic Papers.

Priscilla Liang and T. Willett (2009) "Contagion" in *The Princeton Encyclopedia of the World Economy.*

Blustein, P. (2003) *And the Money Just Kept Rolling In.* Public Affairs.

Mishkin, F. (2007) *The Next Great Globalization: How Disadvantaged Nations can Harness Their Financial System to Get Rich*. Princeton University Press.

Part V. From Sub Prime to Global Crisis, 2007 – 2009

Zandi, rest of book

T. Willett, Priscilla Liang, and Nan Zhang "The Slow Spread of the Global Crisis." JICEP (forthcoming).

Bamber, B. and A. Spencer (2008). *Bear-Trap: The Fall of Bear Stearns and the Panic of 2008.*

Barth, J. et al (2009). *The Rise and Fall of the US Mortgage and Credit Markets: A Comprehensive Analysis of the Market Meltdown.* John Wiley Publishing.

Boyes, R. (2009). *Meltdown Iceland*. Bloomsbury USA, New York.

Calomiris, C. (2008). "The Subprime Turmoil: What's Old, What's New, and What's Next." Paper for the Jackson Hole Symposium, Federal Reserve Bank of Kansas City, August 21-23.

Cassidy, J. (2009). *How Markets Fail*. Farrar, Straus and Giroux, New York.

Caverley, J. (2009). *When Bubbles Burst: Surviving the Financial Fallout.* Nicholes Brealey Publishing, London.

Cohan, W. D. (2009). *House of Cards: A Tale of Hubris and Wretched Excess on Wall Street.* Doubleday Press.

Faber, D. (2009). *And Then the Roof Caved In: How Wall Street's Greed and Stupidity Brought Capitalism to Its Knees*. John Wiley Publishing, Hoboken, NJ.

Gelinas, N. (2009). *After the Fall: Saving Capitalism from Wall Street and Washington*. Encounter Books, New York.

Gorton G. B. (2008). “The Panic of 2007.” Paper for the Jackson Hole Symposium. Federal Reserve Bank of Kansas City, August 21-23.

Kansas, D. (2009) *The Wall Street Journal Guide to the End of Wall Street as We Know It.* Collins Business.

Kaufman, H. (2009). *The Road to Financial Reformation: Warnings, Consequences Reform.* Hoboken, NJ: John Wiley Publishing.

Fitz-Gerald, K. (2010) *Fiscal Hangover: How to Profit from the New Global Economy.* Wiley Publishing.

Gasparino, C. (2009) *The Sellout: How Three Decades of Wall Street Greed and Government Mismanagement Destroyed the Global Financial System.* Harper Business.

McDonald, L. G. and P. Robinson (2009). A Colossal Failure of Common Sense: The Inside Story of the Collapse of Lehman Brothers. Crown Business, New York, NY.

Milne, A. (2009). *The Fall of the House of Credit: What Went Wrong in Banking and What can be Done to Repair the Damage?* Cambridge University Press, New York.

Munchau, W. (2009). *The Meltdown Years: The Unfolding of the Global Economic Crisis.* McGraw-Hill Publishing.

Posner, R. A. (2009). *A Failure of Capitalism: The Crisis of '08 and the Descent into Depression*. Harvard University Press.

Pozen, R. (2010) *Too Big to Save? How to Fix the US Financial System*. John Wiley.

Shiller, R. J. (2008). *The Subprime Solution: How Today's Global Financial Crisis Happened, and What to Do about It.* Princeton University Press.

Sorkin, A. R. (2009). *Too Big to Fail*. Viking, New York.

Soros, G. (2008). *The New Paradigm for Financial Markets: The Credit Crisis of 2008 and What It Means*. Public Affairs.

Soros, G. (2009). *The Crash of 2008 and What it Means: The New Paradigm for Financial Markets.* New York, NY: Public Affairs.

Sowell, T. (2009). *The Housing Boom and Bust*. Basic Books, New York, NY.

Tett, G. (2009). *Fool's Gold: How the Bold Dream of a Small Tribe at J.P. Morgan Was Corrupted by Wall Street Greed and Unleashed a Catastrophe.* Free Press.

Tibman, J. (2009). *The Murder of Lehman Brothers: An Insider's Look at the Global Meltdown.* Brick Tower Press, New York, NY.

Wessel, D. (2009). *In Fed We Trust: Ben Bernanke's War on the Great Panic.* Crown Business, New York.

Part VI. Crisis Prevention, Financial Reform, and Lessons for Risk Management

A. Reforming Financial Regulations: More Focus on Macro Prudential Risk and Incentive Structures

Zandi, Ch. 14

Acharya, V. and M. Richardson, eds. (2009) *Restoring Financial Stability: How to Repair a Failed System.* John Wiley Publishing.
Ch. 5 – "Enhanced Regulation of Large, Complex Financial Institutions."
Ch. 13 – "Regulating Systemic Risk."

Tarullo, D.K. (2008) *Banking on Basel: The Future of International Financial Regulation.* Peterson Institute for International Economics.

B. Some Specific Issues: Corporate Governance Schemes, Fair Value Accounting, and Reform of the Ratings Agencies

AR Ch.3 "The Rating Agencies"

Ch. 7 "Corporate Governance"

Ch. 8 "Rethinking Compensation"

Ch. 9 "Fair Value Accounting"

C. Early Warning Systems

Reinhart and Rogoff (2009) Ch. 17

(R) Sula, O. and T. Willett (2010) "Measuring the Reversibility of Different Types of Capital Flows to Emerging Markets." Emerging Market Finance.

(R) Berg, A., E. Borensztein, and C. Pattillo (2005). "Assessing Early Warning Systems: How Have They Worked in Practice?" IMF Staff Paper, Vol. 52, No.3, pp.462-502.

(R) Morris Goldstein, Graciela Kaminsky, and Carmen Reinhart (2000) *Assessing Financial Vulnerability.* Institute for International Economics.

D. Avoiding Crises: Capital Flows, Sudden Stops, Sound Financial Liberalization, Exchange Rates, and International Financial Policies

T. Willett (2007) "Why the Middle is Unstable: The Political Economy of Exchange Rate Regimes and Currency Crises." The World Economy.

T. Willett et al (2009) *The Global Crisis and Korean International Financial Policies.* Korean Economic Institute, Ch.

Angkinand, A., W. Sawangoenyuang, and C. Wihlborg (2009) "Financial Liberalization and Banking Crises: A Cross-Country Analysis."

Tornell, A. and F. Westermann (2005) *Boom-Bust Cycles and Financial Liberalization*. MIT Press.

E. Lessons for Monetary and Fiscal Policies

Willett et al (2009) <u>The Global Crisis</u> Ch. 11

F. Lessons for Risk Management

Oxelheim and Wihlborg Ch. 12

Engle, R. (2009) *Anticipating Correlations: A New Paradigm for Risk Management*. Princeton University Press.